# Engineering Interpretations

# **Building Site Development**

Soil properties influence development of building sites, including the selection of the site, the design of the structure, construction, post construction performance, and maintenance. Soil limitation ratings of slight, moderate, and severe are given for shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns, landscaping, and golf fairways.

#### Shallow Excavations

Shallow excavations are trenches or holes dug in the soil to a maximum depth of 5 or 6 feet. They are used for pipelines, sewer lines, telephone and power transmission lines, basements, open ditches, and cemeteries. The ratings are based on the soil properties that influence ease of digging and resistance to sloughing.

# **Dwellings With or Without Basements**

These are single-family houses of three stories or less. The foundation is assumed to be spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or the depth of maximum frost penetration, whichever is deeper, for houses without basements, or at a depth of 7 feet if a basement is constructed. The ratings are based on properties affecting soil strength and settlement under a load, and those that affect excavation and construction costs.

# Small Commercial Buildings

Limitation ratings are given for the undisturbed soil on which small commercial buildings of less than three stories without basements are built. The foundation is assumed to be placed on spread footings of reinforced concrete at a depth of 2 feet or the depth of maximum frost penetration, whichever is deeper.

# Local Roads and Streets

Limitation ratings are given for the use of soils for construction of improved local roads and streets that have all-weather surfacing, commonly of asphalt, gravel with binder in it, or concrete, and that are expected to carry automobile traffic all year. These roads and streets are graded to shed water, and conventional drainage measures are provided. With the probable exception of the hard surface, roads and streets are built mainly from the soil at hand.

# Lawns, Landscaping, and Golf Fairways

The soils are rated for their use in establishing and maintaining turf for lawns and golf fairways and ornamental trees and shrubs for residential type landscaping. The ratings are based on the use of soil material at the location with some land smoothing. Irrigation may or may not be needed and is not a criterion in rating. Traps, trees, roughs, and greens are not considered as part of the golf fairway. The properties considered are those listed that affect plant growth and trafficability after vegetation is established.

This subsection includes:

• (a) Building Site Development

## Building Site Development

Map symbol and soil name	  Dwellings without basements   		Dwellings with basements		  Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Lamotte	  Moderately limited  ~shrink-swell   (moderately limited)	0.45	  Moderately limited  ~shrink-swell   (moderately limited)	0.45	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	0.68	  Moderately limited  ~shrink-swell   (moderately limited)	0.45	Not limited	
2B:										
Gatewood	Very limited  ~shrink-swell   (very limited)  ~wetness   (moderately limited)  ~depth to bedrock   (moderately limited)	0.32	Very limited  -hard bedrock <40"  (very limited)  -wetness  (very limited)  -shrink-swell  (limited)	  1.00    1.00    0.96	Very limited   ~shrink-swell   (very limited)   ~depth to bedrock   (moderately limited)   ~wetness   (slightly limited)	  1.00    0.32    0.21	Very limited  ~shrink-swell   (very limited)  ~depth to bedrock   (moderately limited)  ~wetness   (slightly limited)	  1.00    0.32    0.21	Slightly limited   -wetness   (slightly limited)   -depth to bedrock   (slightly limited)   -droughty   (slightly limited)	  0.21    0.17    0.02
2C:		 								
Gatewood	Very limited   ~shrink-swell   (very limited)   ~wetness   (moderately limited)   ~depth to bedrock   (moderately limited)	  1.00    0.55    0.32	Very limited  -hard bedrock <40"  (very limited)  -wetness  (very limited)  -shrink-swell  (limited)	  1.00  1.00    0.96	Very limited   ~shrink-swell   (very limited)   ~slope   (limited)   ~depth to bedrock   (moderately limited)	  1.00    0.83    0.32	Very limited  ~shrink-swell   (very limited)  ~depth to bedrock   (moderately limited)  ~wetness   (slightly limited)	  1.00    0.32    0.21	Slightly limited   -wetness   (slightly limited)   -depth to bedrock   (slightly limited)   -droughty   (slightly limited)	  0.21    0.17    0.02
2D: Gatewood	  Very limited  ~shrink-swell   (very limited)  ~slope   (limited)  ~wetness   (moderately limited)	  1.00    0.76    0.55	Very limited   ~hard bedrock <40"   (very limited)   ~wetness   (very limited)   ~shrink-swell   (limited)	  1.00    1.00    0.96	  very limited  ~slope   (very limited)  ~shrink-swell   (very limited)  ~depth to bedrock   (moderately limited)	  1.00    1.00    0.32	  Very limited  ~shrink-swell   (very limited)  ~slope   (limited)  ~depth to bedrock   (moderately limited)	  1.00    0.63    0.32	Limited  ~slope   (limited)  ~wetness   (slightly limited)  ~depth to bedrock   (slightly limited)	0.63

#### Building Site Development

Map symbol and soil name			   Dwellings with basem   	gs with basements   Small commercial buildings				eets	Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value   
2E: Gatewood	  Very limited  ~shrink-swell  (very limited)  ~slope  (very limited)  ~depth to bedrock  (moderately limited)	1.00	  Very limited  ~hard bedrock <40"  (very limited)  ~slope  (very limited)  ~shrink-swell  (limited)	    1.00    1.00    0.80	  Very limited  ~slope   (very limited)  ~shrink-swell   (very limited)  ~depth to bedrock   (moderately limited)	      1.00    1.00    0.47	  Very limited  ~shrink-swell  (very limited)  ~slope  (very limited)  ~depth to bedrock  (moderately limited)	    1.00    1.00    0.47	  very limited  ~slope   (very limited)  ~droughty   (limited)  ~large stones   (limited)	  1.00    0.75    0.72
4C: Knobtop	Moderately limited   ~shrink-swell   (moderately limited)   ~slope   (moderately limited)   ~wetness   (moderately limited)	0.45	  Very limited  ~wetness   (very limited)  ~depth to bedrock   (limited)  ~slope   (moderately limited)	  1.00    0.94    0.45	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)	  1.00    0.45	  Moderately limited  ~shrink-swell   (moderately limited)  ~slope   (slightly limited)	  0.45    0.04	  Slightly limited  ~too acid   (slightly limited)  ~slope   (slightly limited)	0.30
4D: Knobtop	Moderately limited   ~shrink-swell   (moderately limited)   ~wetness   (moderately limited)   ~slope   (moderately limited)	  0.45    0.45    0.30	Very limited  -hard bedrock <40"   (very limited)  -wetness   (very limited)  -slope   (moderately limited)	  1.00    1.00    0.30	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)  ~depth to bedrock   (slightly limited)	  0.99    0.45    0.18	   Moderately limited   ~shrink-swell   (moderately limited)   ~depth to bedrock   (slightly limited)   ~large stones   (slightly limited)	  0.45    0.18    0.00	Limited  -large stones   (limited)  -too acid   (slightly limited)  -depth to bedrock   (slightly limited)	0.64
6C: Delassus	   Moderately limited   ~shrink-swell   (moderately limited)   ~wetness   (moderately limited)   ~slope   (slightly limited)	  0.45    0.45    0.15	   Very limited   ~wetness   (very limited)   ~depth to bedrock   (moderately limited)   ~shrink-swell   (moderately limited)	  0.44    0.43	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited) 	  0.83    0.45 	  Moderately limited  ~shrink-swell   (moderately limited)   	    0.45       	  Slightly limited  ~large stones   (slightly limited)	0.19

## Building Site Development

Map symbol and soil name	Dwellings without base	lings without basements		Dwellings with basements		dings	Local roads and str	eets	Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6D: Delassus	Limited   ~slope   (limited)   ~shrink-swell   (moderately limited)   ~wetness   (moderately limited)	0.76	Very limited  -wetness (very limited)  -slope (limited)  -depth to bedrock (moderately limited)	  1.00    0.76    0.44	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)	    1.00    0.45	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	0.63	  Limited  ~slope   (limited)	0.63
9C: Viraton	  Moderately limited  ~wetness   (moderately limited) 	    0.59   	  Very limited  ~wetness   (very limited)	    1.00   	  Limited  ~slope   (limited)  ~wetness   (slightly limited)	    0.68    0.28	  Slightly limited  ~wetness   (slightly limited) 	    0.28   	  Slightly limited  ~wetness   (slightly limited)	0.28
10E: Killarney	Very limited   ~slope   (very limited)   ~shrink-swell   (moderately limited)   ~wetness   (moderately limited)	  1.00    0.45 	Very limited  ~slope   (very limited)  ~wetness   (very limited)  ~shrink-swell   (slightly limited)	  1.00    1.00    0.03	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)	  1.00    0.45 	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)	  1.00    0.45 	  Very limited  ~slope   (very limited)  ~droughty   (slightly limited)	1.00
11C: Lebanon	  Limited  ~wetness   (limited)  ~shrink-swell   (moderately limited) 	    0.99    0.45 	  Very limited  ~wetness  (very limited)  ~shrink-swell  (moderately limited)	    1.00    0.45   	Limited  ~slope   (limited)  ~wetness   (limited)  ~shrink-swell   (moderately limited)	  0.68    0.60    0.45	  Limited  ~wetness   (limited)  ~shrink-swell   (moderately limited)	    0.60    0.45 	  Limited  ~wetness   (limited) 	0.60

#### Building Site Development

Map symbol and soil name	Dwellings without basements		Dwellings with baseme	Dwellings with basements   S			Local roads and str	eets	   Lawns and landscaping 	
	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
12E: Goss	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)  ~large stones   (moderately limited)	0.33	Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)  ~large stones   (moderately limited)	  0.45    0.33	   Very limited   ~slope   (very limited)   ~shrink-swell   (moderately limited)   ~large stones   (moderately limited)	1.00	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)  ~large stones   (moderately limited)	   1.00   0.45   0.33	  Very limited  ~slope   (very limited)  ~large stones   (limited)  ~small stones   (limited)	    1.00    0.91    0.62
13F: Clarksville	  Very limited  ~slope   (very limited)  ~large stones   (slightly limited)	    1.00    0.01	  Very limited  ~slope   (very limited)  ~large stones   (slightly limited)	    1.00    0.01   	  Very limited  ~slope   (very limited)  ~large stones   (slightly limited)	1.00	  Very limited  ~slope   (very limited)  ~large stones   (slightly limited)	   1.00   0.01 	  Very limited  ~slope   (very limited)  ~small stones   (very limited)  ~large stones   (moderately limited)	  1.00    1.00    0.60
18C: Courtois	  Moderately limited  ~shrink-swell   (moderately limited) 	    0.45   	  Moderately limited  ~shrink-swell   (moderately limited)   	    0.45     	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	  0.68    0.45	  Moderately limited  ~shrink-swell   (moderately limited)   	    0.45     	  Not limited   	
18D: Courtois	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	  0.76    0.45	Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	  0.45	  Very limited  ~slope   (very limited)  ~shrink-swell   (moderately limited)	  1.00    0.45	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)	  0.63    0.45	  Limited  ~slope   (limited) 	  0.63   
19B: Crider	  Not limited   		  Slightly limited  ~shrink-swell   (slightly limited)	    0.05 	  Slightly limited  ~slope   (slightly limited)	    0.15   	  Not limited   		  Not limited   	

#### Building Site Development

Map symbol and soil name	Dwellings without basements		Dwellings with baseme	ents	  Small commercial build	dings	Local roads and str	eets	Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
19C: Crider	   Moderately limited  ~slope   (moderately limited)	      0.45   	   Moderately limited  ~slope   (moderately limited)  ~shrink-swell   (slightly limited)		  Very limited  ~slope   (very limited)	1.00	  Slightly limited  ~slope   (slightly limited)	0.04	  Slightly limited  ~slope   (slightly limited)	0.04
20B: Fourche	  Moderately limited  ~wetness   (moderately limited)  ~shrink-swell   (moderately limited)	  0.51    0.45 	  Very limited  ~wetness   (very limited)  ~shrink-swell   (moderately limited)		Moderately limited   ~shrink-swell   (moderately limited)   ~slope   (slightly limited)   ~wetness   (slightly limited)	  0.45    0.15    0.13	  Moderately limited  ~shrink-swell   (moderately limited)  ~wetness   (slightly limited)	  0.45    0.13 	  Slightly limited  ~wetness   (slightly limited) 	0.13
20C: Fourche	   Moderately limited   ~wetness   (moderately limited)   ~shrink-swell   (moderately limited)   ~slope   (slightly limited)	0.45	  Very limited  ~wetness   (very limited)  ~shrink-swell   (moderately limited)  ~slope   (slightly limited)	  1.00    0.37    0.15	  Limited  ~slope   (limited)  ~shrink-swell   (moderately limited)  ~wetness   (slightly limited)	  0.83    0.45    0.13	  Moderately limited  ~shrink-swell   (moderately limited)  ~wetness   (slightly limited)	    0.45    0.13 	  Slightly limited  ~wetness   (slightly limited)	0.13
22D: Wilderness	~wetness (limited)	0.99	  Very limited  ~wetness   (very limited)  ~slope   (moderately limited)	0.60	  Very limited  ~slope   (very limited)  ~wetness   (limited)	  1.00    0.60 	  Limited  ~wetness   (limited)  ~slope   (slightly limited)	  0.60    0.16 	Very limited  ~droughty   (very limited)  ~small stones   (limited)  ~wetness   (limited)	  1.00    0.65    0.60

## Building Site Development

Map symbol and soil name	Dwellings without basements		   Dwellings with basem 	ents	  Small commercial buil 	ldings	Local roads and streets		   Lawns and landscaping 	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22E: Wilderness	  Very limited  ~slope   (very limited)	1.00	  Very limited  ~slope   (very limited) 	      1.00     	  Very limited  ~slope   (very limited) 	1.00	  Very limited  ~slope   (very limited) 	1.00	  very limited  ~slope   (very limited)  ~droughty   (very limited)  ~small stones   (limited)	  1.00    1.00    0.65
25A: Auxvasse	  Very limited  ~shrink-swell   (very limited)  ~wetness   (limited)	    1.00    0.99	  very limited  ~wetness  (very limited)  ~shrink-swell  (limited)	    1.00    0.66	  Very limited  ~shrink-swell   (very limited)  ~wetness   (limited)	1.00	  Very limited  ~shrink-swell   (very limited)  ~wetness   (limited)	1.00	  Limited  ~wetness   (limited)	0.60
31A: Loughboro	Very limited   ~shrink-swell   (very limited)   ~wetness   (limited)	  1.00    0.99	Very limited  ~wetness (very limited) ~shrink-swell (limited)	  1.00    0.78	  Very limited  ~shrink-swell   (very limited)  ~wetness   (limited)	1.00	  Very limited  ~shrink-swell   (very limited)  ~wetness   (limited)	1.00	Limited  ~wetness   (limited)	0.60
35C: Viburnum	Very limited   ~shrink-swell   (very limited)   ~wetness   (moderately limited)   ~slope   (slightly limited)	  1.00    0.59    0.15	Very limited  -wetness (very limited)  -shrink-swell (very limited)  -slope (slightly limited)	  1.00    1.00    0.15	  Very limited  ~shrink-swell   (very limited)  ~slope   (limited)  ~wetness   (slightly limited)	1.00	  Very limited  ~shrink-swell   (very limited)  ~wetness   (slightly limited)	1.00	Slightly limited  ~wetness   (slightly limited)	0.28

#### Building Site Development

Map symbol and soil name	Dwellings without base	ements	s Dwellings with basements		  Small commercial buil   	dings	   Local roads and str 	Lawns and landscaping		
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
36B: Lowell	   Moderately limited   ~shrink-swell   (moderately limited)   ~wetness   (slightly limited)	0.45	  Limited  ~wetness   (limited)  ~shrink-swell   (moderately limited)  ~depth to bedrock   (slightly limited)	0.73	  Moderately limited  ~shrink-swell   (moderately limited)  ~slope   (slightly limited)	0.45	  Moderately limited  ~shrink-swell   (moderately limited)	      0.45     	  Not limited 	
41D: Gasconade	Very limited  -hard bedrock <20" (very limited)  -large stones (very limited)  -slope (limited)	  1.00    1.00    0.83	  Very limited  ~hard bedrock <40"   (very limited)  ~large stones   (very limited)  ~slope   (limited)		  Very limited  ~hard bedrock <20"   (very limited)  ~slope   (very limited)  ~large stones   (very limited)	  1.00    1.00    1.00	  Very limited  ~hard bedrock <20"   (very limited)  ~large stones   (very limited)  ~slope   (limited)	  1.00    1.00    0.84	  Very limited  ~large stones >30%   (very limited)  ~shallow to bedrock   (very limited)  ~droughty   (very limited)	  1.00    1.00    1.00
42F: Irondale	   Very limited   ~slope   (very limited)   ~large stones   (limited)   ~depth to bedrock   (slightly limited)	  1.00    0.64    0.23	  Very limited  ~hard bedrock <40"   (very limited)  ~slope   (very limited)  ~large stones   (limited)	  1.00    1.00    0.64	  Very limited  ~slope   (very limited)  ~large stones   (limited)  ~depth to bedrock   (slightly limited)	  1.00    0.64    0.23	  Very limited  ~slope   (very limited)  ~large stones   (limited)  ~depth to bedrock   (slightly limited)	  1.00    0.64    0.23	(very limited)	  1.00    0.72    0.58
43E: Syenite		0.40	  Very limited  ~hard bedrock <40"   (very limited)  ~slope   (very limited)	  1.00    1.00 	  Very limited  ~slope   (very limited)  ~depth to bedrock   (moderately limited) 	  1.00    0.40 	  Very limited  ~slope   (very limited)  ~depth to bedrock   (moderately limited) 	  1.00    0.40   	  Very limited  ~slope   (very limited)  ~depth to bedrock   (slightly limited)  ~large stones   (slightly limited)	  1.00    0.25    0.13

#### Building Site Development

					1					
Map symbol and soil name	  Dwellings without base 	ements	   Dwellings with basem 	ents	  Small commercial buil 	dings.	   Local roads and str 	eets	Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45F: Taumsauk  Irondale  Rock outcrop	<pre>~hard bedrock &lt;20"   (very limited) ~slope   (very limited) ~large stones   (limited)  Very limited ~slope   (very limited) ~large stones   (limited) </pre> <pre>~large stones</pre> (limited) <pre>~large stones</pre> (limited) <pre>~depth to bedrock</pre> (slightly limited)	1.00   1.00   0.91   1.00   0.64   0.23	Very limited  -hard bedrock <40"   (very limited)  -slope   (very limited)  -large stones   (limited)     Very limited  -hard bedrock <40"   (very limited)  -slope   (very limited)  -large stones   (limited)  -large stones   (limited)  -Not rated	  1.00    0.91 	Very limited   ~hard bedrock <20"   (very limited)   ~slope   (very limited)   ~large stones   (limited)     Very limited   ~slope   (very limited)   ~large stones   (limited)   ~large stones   (limited)   ~depth to bedrock   (slightly limited)   Not rated	1.00   1.00   0.91   1.00   0.64   0.23	Very limited   ~hard bedrock <20"   (very limited)   ~slope   (very limited)   ~large stones   (limited)     Very limited   ~slope   (very limited)   ~large stones   (limited)   ~large stones   (limited)   ~depth to bedrock   (slightly limited)   Not rated	1.00   1.00   0.91   1.00   0.64   0.23	(very limited)	  1.00  1.00  1.00  1.00    0.72  0.58
52B: Secesh 67: Wakeland 80B: Bloomsdale	  Very limited  ~flooding  (very limited)  ~wetness  (moderately limited)	      1.00    0.45	Not limited   Very limited   ~flooding   (very limited)   ~wetness   (very limited)   Very limited   ~flooding   (very limited)   ~shrink-swell   (slightly limited)	1.00	Not limited   Very limited   ~flooding   (very limited)   ~wetness   (slightly limited)     Very limited   ~flooding   (very limited)   ~shrink-swell   (moderately limited)	1.00	Not limited   Very limited   ~flooding   (very limited)   ~wetness   (slightly limited)   Very limited   ~flooding   (very limited)   ~shrink-swell   (moderately limited)	  0.28        1.00    0.45	Not limited   Very limited   ~flooding   (very limited)   ~wetness   (slightly limited)     Very limited   ~flooding   (very limited)   ~droughty   (slightly limited)	  1.00  0.28    1.00  0.12

#### Building Site Development

Map symbol and soil name	Dwellings without basements		Dwellings with basem	ents	  Small commercial buil	dings.	Local roads and str	eets	Lawns and landscaping	
	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
81A: Midco	  Very limited  ~flooding   (very limited)	1.00	  Very limited  ~flooding   (very limited) 	      1.00       	  Very limited  ~flooding   (very limited) 	1.00	  Very limited  ~flooding   (very limited) 	      1.00       	  Very limited  ~flooding   (very limited)  ~small stones   (limited)  ~droughty   (slightly limited)	  1.00    0.77    0.19
82A: Dameron	  Very limited  ~flooding   (very limited)	    1.00   	  Very limited  ~flooding   (very limited)  ~shrink-swell   (slightly limited)	  1.00    0.11	  Very limited  ~flooding   (very limited) 	1.00	  Very limited  ~flooding   (very limited) 	1.00	  Very limited  ~flooding   (very limited)  ~large stones   (slightly limited)	  1.00    0.01
91: Udipsamments	  Very limited  ~slope   (very limited)	1.00	  Very limited  ~slope   (very limited) 	1.00	  Very limited  ~slope   (very limited) 	1.00	  Very limited  ~slope   (very limited)   	1.00	  Not Rated  Not Rated  -  ~slope   (very limited)  ~droughty   (moderately limited)	1.00
94: Pits	    Not rated 	     	    Not rated		    Not rated 		    Not rated		    Not rated 	
Dumps	 				 					
AED: Orthent	  Not rated 		  Not rated 		  Not rated 		  Not rated 		  Not rated 	
Water	  Not rated 		  Not rated   	   	  Not rated   	      -	  Not rated   		  Not rated   	   